

CLAIMS

1. A method for manufacturing a liquid discharge head comprising the steps of:

forming a solid layer for forming a flow path
5 on a substrate on which an energy generating element is arranged to generate energy that is used to discharge liquid; forming, on the substrate where the solid layer is mounted, a coating layer for coating the solid layer;

10 forming a discharge port used to discharge a liquid, through a photolithographic process, in the coating layer formed on the solid layer; and

removing the solid layer to form a flow path that communicates with the energy element and the
15 discharge port,

whereby a material used for the coating layer contains a cationically polymerizable chemical compound, cationic photopolymerization initiator and an inhibitor of cationic photopolymerization, and

20 whereby a material of the solid layer that forms a boundary with a portion where the discharge port of the coating layer is formed contains a copolymer of methacrylic acid and methacrylate ester.

2. A method according to claim 1, whereby the
25 boundary between the solid layer and the coated layer is formed of a copolymer of methacrylic acid and methyl methacrylate.

3. A method according to claim 1, whereby, the copolymer of methacrylic acid and methacrylate ester has a weight-average molecular weight of 50000 to 300000 and a ratio of a content of methacrylic acid
5 of 5 to 30 weight%.

4. A method according to claim 1, whereby the inhibitor of cationic photopolymerization is a basic material having a pair of nonshared electrons.

5. A method according to claim 4, whereby the
10 inhibitor of cationic photopolymerization is a nitrogen-containing compound having a pair of nonshared electrons.

6. A method according to claim 5, whereby the inhibitor of cationic photopolymerization is an amine
15 compound.

7. A method according to claim 1, whereby the step of forming the solid layer includes the steps of:

forming, on the substrate, a first positive
20 type photosensitive material layer that is exposed to ionizing radiation of a first wavelength,

forming, on the first positive type photosensitive material layer, a second positive type photosensitive material layer that is exposed to
25 ionizing radiation of a second wavelength that is different from the first wavelength,

irradiating the ionizing radiation of the

second wavelength to the substrate where the first and the second positive type photosensitive material layers are formed, and forming a desired pattern on the second positive type photosensitive material
5 layer, and

irradiating the ionizing radiation of the first wavelength to the substrate where the first and the second positive type photosensitive material layers are formed, and forming a desired pattern on the
10 first positive type photosensitive material layer; and whereby the second positive type photosensitive material layer forms the boundary with the coated layer.

8. A method according to claim 7, whereby a
15 material for forming the first positive type photosensitive material layer contains polymethylisopropenylketone.

9. A liquid discharge head manufactured by a method according to one of claims 1 to 8, wherein a
20 discharge port formation material used for forming a discharge port for the liquid discharge head contains a cationically polymerizable chemical compound, a cationic photopolymerization initiator and an inhibitor of cationic photopolymerization.